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UNITED STATES PATENT AND TRADEMARK OFFICE

BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES

Ex parte DAMIEN MICHEL ANDRÉ CAMELOT and
ELIZE WILLEM BONTENBAL

Appeal 2009-003055
Application 10/631,831[1]
Technology Center 1700

Heard: 25 June 2009[2]
Decided:[3] July 2, 2009

Before JEFFREY T. SMITH, MARK NAGUMO, and
MICHAEL P. COLAIANNI, *Administrative Patent Judges.*

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[1] Application 10/631,831, *Encapsulated Crystalline Lactic Acid*, filed 1 August 2003, claiming the benefit of a provisional application filed 2 August 2002. The specification is referred to as the "831 Specification," and is cited as "Spec." The real party in interest is listed as Purac Biochem B.V. (Brief on Appeal, filed 28 January 2008 ("Br."), 3.)

[2] The transcript, which was not available when this Decision was entered, will be made of record.

[3] The two-month time period for filing an appeal or commencing a civil action, as recited in 37 C.F.R. § 1.304, begins to run from the Decided Date shown on this page of the decision. The time period does not run from the Mail Date (paper delivery) or Notification Date (electronic delivery).

NAGUMO, *Administrative Patent Judge.*

DECISION ON APPEAL

A. Introduction

Damien Michel André Camelot and Elize Willem Bontenbal ("Camelot") timely appeal under 35 U.S.C. § 134(a) from the final rejection[4] of claims 1-5, 7-16, and 18-27. Claim 17, the only other pending claim, has been withdrawn from consideration. We have jurisdiction under 35 U.S.C. § 6. We REVERSE.

The subject matter on appeal relates to encapsulated particles comprising crystalline lactic acid and a wetting agent. Certain embodiments of the invention are said to be useful in the food industry, e.g., in the making of dry or semi dry sausages. (Spec. 1, ¶ [0003].) The use of encapsulated food acids in meat is said to have been first reported in the 1960s. (*Id.* at 2, ¶ [0004].) Coated solid lactic acid is said to have been widely used, but the lactic acid in such formulations is said to be solidified by mixing lactic acid with another component, rather than being in crystalline form. (*Id.* at 2-3, ¶ [0006].) Due to the presence of the other component, the content of lactic acid is therefore less than if crystalline lactic acid were encapsulated. However, the 831 Specification explains, the hygroscopicity of lactic acid crystals results in a significant liquid phase at the surface of the crystals, which makes encapsulation difficult. (*Id.* at 3, ¶ [0007].)

[4] Office action mailed 29 March 2007 ("Final Rejection"; cited as "FR").

According to Camelot, these difficulties have been overcome by treating the lactic acid crystals with a wetting agent such as silica powder prior to encapsulation in a food-grade coating material such as partially hydrogenated palm oil. (Spec. 4, ¶¶ [0010]-[0011].)

Representative Claim 1 is reproduced from the Claims Appendix to the Principal Brief on Appeal:

1. A composition comprising
an encapsulated particle comprising
crystalline lactic acid and a wetting agent.

(Claims App., Br. 13; paragraphing added.)

The Examiner has maintained the following grounds of rejection:[5]

> Claims 1-5, 7-16, and 18-27 stand rejected under 35 U.S.C. § 103(a) in view of the combined teachings of Chung[6] or Wu[7] or Percel[8] and Borsook[9] and Schouten.[10]

Camelot argues that although Chung, Wu, and Percel teach encapsulated food acids, none teach or suggest encapsulated particles

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[5] Examiner's Answer mailed 17 March 2008. ("Ans.").

[6] Frank H.Y. Chung and Sylvie Marie-Pierre Lavault, *Novel Encapsulated Leavening Acid Composition*, EP 0 699 392 a2 (1996).

[7] Wen-Hsin Wu et al., *Low Melt Encapsulation with High Laurate Canola Oil*, U.S. Patent 6,153,236 (2000).

[8] Phillip J. Percel and Douglas W. Perkins, *Process of Preparing a Particulate Food Acidulant*, U.S. Patent 4,537,784 (1985).

[9] Henry Borsook et al, *The Preparation of Crystalline Lactic Acid*, 102 J. Biol. Chem. 449 (1933).

[10] A. Schouten et al., *Low Temperature Crystal Structure and Molecular Conformation of L-(+)-Lactic Acid*, 323 J. Mol. Structure 165 (1994).

comprising crystalline lactic acid and a wetting agent. Chung, according to Camelot, does not disclose lactic acid as a leavening agent. Wu and Percel, Camelot argues, teach applying liquid lactic acid to a carrier such as calcium lactate, to prepare a dry solid form. (Br. 7-8.) Nor is there any basis, Camelot argues, for the Examiner's finding that drying the lactic acid on a substrate results in crystalline lactic acid. (*Id.* at 6.) Camelot argues further that Percel, by teaching that it has been impossible to use crystalline lactic acid for acidulation of meat, teaches the "'impossibility' of encapsulating liquid [sic: crystalline?] lactic acid." (*Id.* at 7.) There is no motivation, in Camelot's view, to combine the teachings of Borsook, regarding the preparation of crystalline lactic acid, and of Schouten, also teaching the preparation of crystalline lactic acid, with the teachings of Chung, Wu, or Percel, to encapsulate crystalline lactic acid. (*Id.* at 8-9.) Moreover, Camelot argues, the references teach away from the combination. (Br. 9-10.) Camelot further argues that unexpected results overcome any prima facie case of obviousness. (Br. 10-11.)

The Examiner maintains that Percel teaches a process of making a "dry lactic acid, which is seen to have been crystalline." (FR 2; Ans. 4.) "Nothing," the Examiner adds, "is seen that anhydrous lactic acid is not crystalline, since the water is removed." (Ans. 6-7.) The Examiner responds to Camelot's traverse of the rejection by arguing that "[n]othing has been shown positively that the lactic acid of Percel is not crystalline. Mere arguments do not substitute for a showing that the lactic acid of Percel is not crystalline." (*Id.* at 7.) The claimed invention would have been obvious in view of Wu, according to the Examiner, because solid lactic acid

is easier to handle. (*Id.*) As for the silence of Chung as to lactic acid, the Examiner points to Percel's teaching that lactic acid has a tangy flavor, and notes that lactic acid may not be suitable for use in a dough or short bread composition because of its flavor. (*Id.* at 7-8.)

B. Discussion

As the Appellant, Camelot bears the procedural burden of showing harmful error in the Examiner's rejections. *See, e.g., In re Kahn*, 441 F.3d 977, 985-86 (Fed. Cir. 2006) ("On appeal to the Board, an applicant can overcome a rejection [under § 103] by showing insufficient evidence of *prima facie* obviousness") (citation and internal quote omitted).

In the present case, the Examiner found, without explanation, that drying solutions of lactic acid on a substrate such as calcium lactate, as taught by Percel (Percel, col. 2, ll. 48-57) and by Wu (Wu, col. 4, ll. 54-56), resulted in crystalline lactic acid. Camelot challenged this finding, pointing out that drying and crystallization are not necessarily the same. (Br. 6.) In response, the Examiner has not directed our attention to any credible evidence of record showing that Camelot's statement is not true in the case of lactic acid. Nor has the Examiner directed our attention to any credible evidence in the record indicating that the dried lactic acid is, more likely than not (i.e., by the preponderance of the evidence) crystalline.

It is, of course, true that, "when the PTO shows *sound basis* for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not." *In re Spada*, 911 F.2d 705, 708 (Fed. Cir. 1990) (emphasis added). But here, the Examiner

has not advanced sufficient reasons to shift the burdens of production and persuasion to Camelot. Borsook, for example, teaches the purification of lactic acid from "the commercial syrup" (Borsook, 449) by fractional distillation followed by fractional crystallization from a mixture of equal volumes of ethyl and isopropyl ethers (*id.* at 450). Moreover, Schouten teaches the preparation of single crystals of L-(+)-lactic acid by cooling an aqueous solution of that enantiomer. (Schouten 165.) The Examiner has not shown, for example, that persons skilled in the art would have thought that the conditions taught by either Borsook or by Schouten are sufficiently similar to those occurring upon drying solutions of lactic acid on a substrate, to produce crystalline lactic acid. Nor has the Examiner directed our attention to any disclosed properties of the dried lactic acid that indicate, by a preponderance of the evidence, that it is crystalline.

As for the asserted relative ease of handling solids that the Examiner maintains would have made the modification of Wu obvious (Br. 7), the Examiner has not addressed the difficulties known to the art and reported by Percel (which is listed on the face of Wu). The mere assertion of the conclusion of obviousness neither establishes the prima facie case nor rebuts a challenge that the prima facie case has not been met.

The Examiner's remarks concerning the undesirability of tangy flavors in doughs appears to cut against the obviousness in view of Chung, more than for obviousness.

Finally, while we agree with the Examiner that Percel teaches that the use of crystalline lactic acid to acidulate meat is "impossible," not that the encapsulation of crystalline lactic acid is impossible, we also agree with

Camelot that the preponderance of the evidence is that none of Percel, Wu, or Chang suggest the use of encapsulated crystalline lactic acid. The prior knowledge that lactic acid may be crystallized does not cure the deficiencies of Percel, Wu, or Chung.

The Supreme Court recently stated that, "[i]f a person of ordinary skill can implement a predictable variation, § 103 likely bars its patentability." *KSR Int'l Co. v. Teleflex, Inc.*, 550 U.S. 398, 417 (2007). The Court also emphasized, however, that "there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness. This requirement is as much rooted in the Administrative Procedure Act, which ensures due process and non-arbitrary decisionmaking, as it is in § 103.") *KSR,* 550 U.S. at 418, *citing*, *with approval*, *In re Kahn*, 441 F.3d 977, 988 (Fed. Cir. 2006). The Examiner, in this case, has failed to provide the articulated reasoning and the rational underpinning based on credible evidence required to establish a prima facie case of obviousness.

We need not reach Camelot's arguments regarding unexpected results.

C. Order

We REVERSE the rejection of claims 1-5, 7-16, and 18-27 under 35 U.S.C. § 103(a) in view of the combined teachings of Chung or Wu or Percel and Borsook and Schouten.

REVERSED

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